Bud's copy

TITUSVILLE AMATEUR RADIO CLUB NEWSLETTER

JUNE, 2000

PRESIDENT'S CORNER

By Bud Hughes K4CWG

The City of Titusville has approved the use of the WELL FIELD #3 site for the TARC Field Day activities. The Well Field Facility is in South Titusville. To get there from SR 50, go South on Barna Ave. for approximately 6 tenths of a mile until you come to a dirt road leading off to the left. There will be signs on Barna at the dirt road. Go up and over the hill to the end of the road and the site will be on your right. Drive through the gate and into the facility. Hope to see you at Field Day on June 24 and 25.

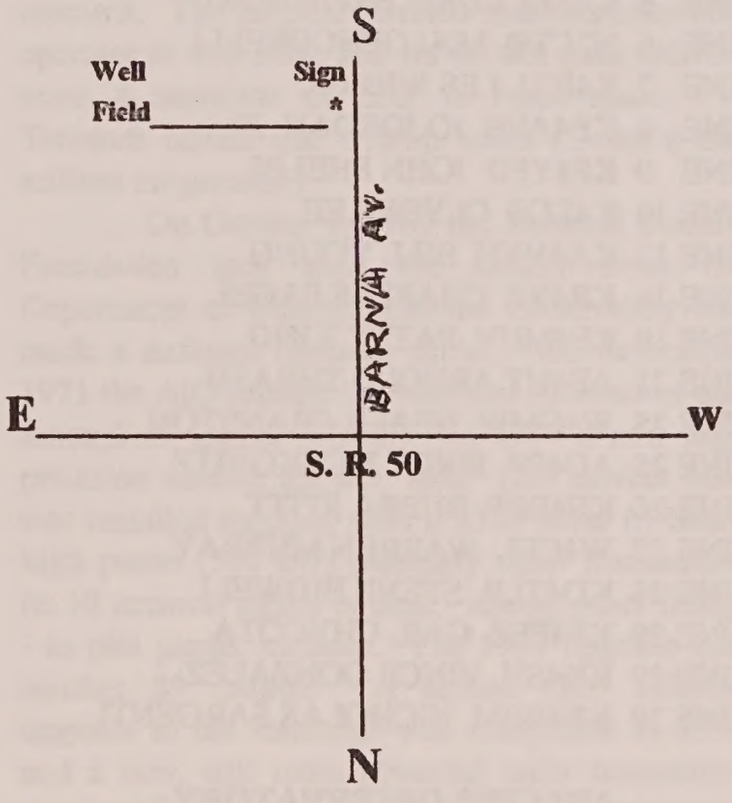
If you wish to upgrade your ham license and you have misplaced your previously held license that you need for verification of element credit or need the date you obtained your previously held ticket, you might consider the following: Write a letter to the Federal Communications Commissions, Attention: Amateur License Division, 1270 Fairfield Rd., Gettysburg, PA. You will need to include:

1. State the information you are requesting.
2. Your call sign.
3. Approximate date of issue.
4. Your name as was on the license.
5. Your current address.
6. Your Area Code and your Telephone #. (Thanks to Paul, WD4EBA).

If you prefer you may send the same request via fax @ 717-338-2696 (Thanks to Jim, N4MOD.)

Don't forget the UCF Tailgate on Saturday, June 10. There will be a W5YI-VEC test session at 1PM.

MAP TO FIELD DAY SITE



FIELD DAY SUPPER
SATURDAY, JUNE 24, 5 P.M.
TARC WILL FURNISH MEAT & DRINKS
PLEASE COME
BRING A COVERED DISH
EITHER A SIDE DISH OR DESSERT
*****BRING A CHAIR****

HAPPY BIRTHDAY

JUNE BIRTHDAYS

JUNE 1 KU6TF ERIC HEARD
JUNE 2 KE4WJV TERRY DAMPIER
JUNE 4 KE4HOG NANCY PREVATT
JUNE 6 K4ZZZ CHRIS BROWNING
JUNE 6 N2CTQ LOU GENCORELLI
JUNE 7 K4BZJ LES WIDICK
JUNE 8 KE4AEB JO JORDAN, JR.
JUNE 9 KF4YFD JOHN PHELPS
JUNE 10 K4EOS CLYDE LEE
JUNE 12 KA4VYH BILL YOUNG
JUNE 16 KR4YZ CHARLES FAGEL
JUNE 19 KF4MUV PATTY KING
JUNE 21 AE4NT ARNOLD THRASH
JUNE 25 W4GMW NEALE CRANSTON
JUNE 25 AD4PP JERRY MOSKOVITZ
JUNE 26 KE4BBP BUBBA STITT
JUNE 27 W4CEL WARREN MURRAY
JUNE 28 KD4TLR STEVE BIDWELL
JUNE 29 KF4FEZ GAIL CHYCOTA
JUNE 29 KK4SH VINCE GONZALEZ
JUNE 30 KE4BBM NICHOLAS SARGENTI

ARECIBO OBSERVATORY THE WORLDS MOST SENSITIVE RADAR AND RADIO TELESCOPE!

From W5YI Report - 5/15/00

The weekend of April 8th I journeyed to San Juan, Puerto Rico to conduct a meeting with our volunteer examiners and VE team leaders. The highlight of the weekend, however, was a behind-the-scenes side trip to the Arecibo Observatory hosted by Bill Genter, KP3O.

Arecibo, home of the world's largest and most powerful telescope for radar and radio astronomy, is located about an hour and a half drive west of San Juan. The Arecibo Observatory can probe objects 10 billion light-years away...to the very edge of the universe. The Arecibo Observatory is part of the National Astronomy and ionosphere Center (NAIC, a national research center operated by Cornell University under a cooperative agreement with the National Science Foundation (NSF). The NSF is an independent federal agency whose aim is to promote scientific and engineering progress in the United States. Additional support is provided by NASA, the National Aeronautics and Space Administration.

The Observatory operates on a continuous basis, 24 hours a day every day, providing observing time, electronics, computer, travel and logistic support to scientists from all over the world. Originally, it was intended to study Earth's ionosphere. Today, it is used for radio and radar astronomy, as well as atmospheric and ionospheric studies. The results of all research are published in various scientific journals which is publicly available.

Radio astronomy deals with observation of radio signals emitted by objects in deep space. About three quarters of the observing time at Arecibo is devoted to radio astronomy - receiving, detecting, amplifying and recording electromagnetic radio signals from distant objects - such as remote planets, moons and stars. Cosmic radio emissions (as far as is known) comes entirely from natural processes. Radio astronomy detects the size and motion of planets, comets and asteroids by transmitting pulses of radio energy and receiving reflections, or echoes, from the objects in its beam.

The world's largest radio telescope:

The Arecibo Observatory is the site of the world's largest single-dish radio telescope. Unlike most dishes, this one lays flat on the ground nestled in a natural hollow among mountains. The gigantic

dish is fabricated from 300 tons of aluminum and has a surface area of more than eighteen acres...about the size of 26 football fields! It consists of nearly 40,000 individual reflecting panels attached to a network of steel cables. There are perforations in the panels to allow vegetation to grow under the dish. The panels focus the incoming radio waves from outer space onto a detecting platform suspended above the dish. The "platform", a 500 ton structure supported by cables from three towers, can be adjusted to enable the telescope to observe the sky from 43° north to 6° south. Incoming rays first reflected off the fixed reflector on the bottom of the sinkhole are reflected up and off of two separate mirrors. They finally come to a point focus at the receiver room. You have to see it to believe it!

Use of the Arecibo Observatory is available on an equal, competitive basis to all scientists from throughout the world. Observing time is granted on the basis of the most promising research as ascertained by a panel of independent referees who review the proposals sent to the Observatory by interested scientists. Every year about 200 scientists visit the Observatory facilities to pursue their research project, and numerous students perform observations that lead to their master and doctoral dissertations.

The Observatory had its origin in the fifties when a Cornell University electrical engineering professor by the name of William E. Gordon was interested in studying the properties of the Earth's upper atmosphere. He conceived the idea of using radar back scatter to study the ionosphere. Funding for the project was obtained from the Advanced Research Projects Agency (ARPA). Gordon believed that a parabolic dish could be built on the ground with a movable receiver hanging above it. Built by the US Air Force, construction of the Aerobic Ionoaspheric Observatory (AIO) started in the summer of 1960 and began operation three years later. The huge antenna is steered by moving the feed point which is suspended on a track 450 feet above the stationary dish. It cost more than $9 million to build.

The location of the observatory was important. To be effective, it had to be near the equator. Puerto Rico was chosen over a site in Hawaii since it offered the advantage of being located in an area with large limestone sinkholes which provided a natural bed in which to construct the 305 meter (1000 foot wide by 167 foot deep) reflector.

Arecibo, located in the rugged terrain of northwestern Puerto Rico, was selected over two other sinkhole sites because it was close to an existing road. The Observatory which spans 118 acres also has thirty-two log-periodic antennas and transmitters with which to conduct ionospheric research. The original Arecibo radar antenna still operates at 430 MHz and its 62 dBi gain delivers some 4 terawatts of ERP to outer space. A Terawatt equals one trillion watts (...that's one million megawatts!)

On October 1, 1969 the National Science Foundation took over the facility from the Department of Defense and the Observatory was made a national research center. On September 1971 the AIO became the National Astronomy and Ionosphere Center (NAIC). In 1974 a new high precision surface for the "dish" (the current one) was installed together with a 2380 MHz (S band) high power (500 kW) planetary radar transmitter. Its 10 terawatt signal is used - among other things - to plot planet surfaces. The 1974 upgrade cost another $9 million. A second ($25 million) upgrade to the telescope was completed in 1997 and a new, still more powerful radar transmitter was installed. Its 20 terawatt ERP is the strongest radio signal emitted from Earth. Observations are now possible from 50 MHz to beyond 10 GHz (6 meters to 3 centimeters.)

About 140 persons are employed by the Observatory providing everything from food to software in support of the operation. A scientific staff of about 16 divide their time between scientific research and assistance to visiting scientists. Engineers, computer experts, and

technicians design and build new instrumentation and keep it in operation. A large maintenance staff keeps the telescope and associated instrumentation as well as the site in optimal condition. A staff of telescope operators support observing twenty-four hours per day. The telescope also has played a starring role in two popular movie films: "Golden Eye" (1995 and "Contact" (1997).

Many of the technical staff are ham operators including Bill Genter KP3O - Receiver Engineer; Jon Hagen KP4I - Transmitter Engineer; Jose Jimenez KP4FGG - Structural Engineer; Jose Rosa WP4ATM - Senior Receiver Technician; Angel M. Vazquex WP3R - Computer Networks Administrator and Rey Velez KP4REY - Telescope Operations Head. Bill Genter KP3O is also president of their in-house ham club, the Arecibo Amateur Radio Club.

Professor Joseph Taylor, K1JT - winner of the 1993 Nobel prize for physics - completed his research which confirmed Einstein's General Theory of Relativity at the Arecibo Observatory. Taylor credits ham radio with getting him started in physics. His biography says he and his brother "...filled most of the third floor of his home with working ham-radio transmitters and receivers. Our rigs were mostly built from a mixture of post-war surplus equipment and junk television sets...A fascination senior honors project in physics allowed me to combine a working knowledge of radio-frequency electronics with an awakening appreciation of scientific inquiry, and to build a working radio telescope. My principal references were an old friend, The Radio Amateur's Handbook, and an early book on radio astronomy..."

There has also been several SETI - the Search for Extra Terrestrial Intelligence - programs conducted at Aerobic but so far, no advanced cultures have been discovered. There are some 300 billion stars in the Milky Way galaxy...some of which have planets. And it is possible that some of them harbor life. It is thought that the closest advanced technical civilization may be only a few hundred light-years from Earth, which would mean that radio communications are feasible.

The Aerobic Observatory is open to the public Tuesday through Sunday and they have a very interesting visitor's Center with many interactive exhibits.

You never know what you'll find when you dig a hole in a big city. Workers in New York City recently found 175 miles of iron pipe underground in Manhattan and Brooklyn, empty and unused for decades. Originally laid in 1908 for future expansion for the water works, they were pretty much forgotten until recently. Telecommunications companies plan to bring new life to the pipes by outfitting them with fiber-optic cables. This will save lots of time and money, since no one needs to dig a hole or block traffic.

Running outpost tubes in parallel boosts output power in amplifiers of all kinds, from ham rigs to TV transmitters. Some of the latest digital TV transmitters not only "bunch" tubes together, they run them far below their maximum rated output power. This is a backup feature. If one of the tubes fails, the others can be driven harder to maintain the original output power with no harm to the remaining tubes.

INTERNET NEWS: "I can't remember my password, but I know what it looks like." This may be a familiar phrase in the near future. A new software program called v-Go Pro lets you turn an ordinary password-entry system on your computer into a graphical-based system. Rather than have to remember a difficult phrase or sequence of unintelligible letters and numbers, you can instead point and click on a series of boxes of the atomic Period Table of Elements, for example. Such a password system is easier to remember and harder for hackers to bypass. It's made by passlogix.

"Click and Smell" and "Click and Taste" coming to the Web! Elwood Ivey Jr. Of TriSenx

has obtained a patent for a desktop printer-like device that allows surfers to download smells and tastes from the Internet. The scent and taste technology works by mixing several base chemicals that emit the desired smell or simulated taste. A rose will smell like a rose when you click on it.

WASHINGTON WHISPERS: The FCC is expected to issue a *Notice of Proposed Rulemaking* that would greatly expand the range of frequencies now available for wireless communications and radar systems that could detect the heartbeat of a victim trapped under a pile of earthquake rubble.

Current federal regulations prohibit the "intentional" emission of signals in the ultra wideband (UWB) range by anyone who hasn't purchased the right to operate on a specific frequency. As part of an effort to open UWB and expand the usable spectrum, the FCC issued waivers to three companies for "limited marketing" of devices that emit pulses over a wide band of frequencies, each lasting half a billionth of a second. One of the companies is Time Domain Corp. of Huntsville, Ala., whose founder is credited with inventing the technology.

The new devices operate by emitting pulses on a wide band of frequencies, each lasting half a billionth of a second. The pulse has a no effect on any single frequency, thereby eliminating interference to existing users. A feature of the technology is that the signals can penetrate concrete walls, actually revealing the movement of a person on the other side.

Under the waiver granted by the FCC, Time Domain developed RadarVision, a device designed to see through solid objects. One of its applications is that it can be used by rescuers to pull victims out of earthquake rubble and bombed buildings. The device could also allow police to pinpoint the location of a suspect inside a building.

But radar is only one of many possible applications. It may be possible to fuel a low-cost, low-power wireless network to computers, phones and TV sets without the need for hard wiring. When integrated into cell phones, the location of the user could be readily determined by the user as well as the 911 emergency operator.

A man's gotta do..." If you're male and about to turn 18 (or know someone else who is), federal law requires you to register with the Selective Service System. But if you don't feel like going to the Post Office to fill out the form, you can register on line. Click on www.sss.gov. If you're older and its been a while since you've registered, you can check to see your current status, as well.

The U. S. Department of Energy's Lawrence Livermore National Laboratory recently grew its own "diamond" recently. A chunk of potassium dihyrdogen phosphate, about two feet per side and weighing over 700 pounds was recently produced there. The transparent crystal was "grown" over the course of a couple of months and will be used in a huge laser that's being built at Lawrence.

Credit card information stolen from an Internet retail site. MSNBC has reported that a computer hacker stole and then hid 485,000 credit card numbers - including expiration dates and cardholder names and addresses - on an unnamed U. S. agency's Web site in January 1999. The data file, which included Visa, MasterCard, American Express and Discover cards, was discovered in March 1999 on the government system when the Web administrator noticed excessive storage space being used for no reason. There was no evidence that any of the cards were used to commit fraud and some of the accounts were not active.

MSNBC offered the following tip: Never use a bank debit card for online purchases. Use a credit or charge card. You are liable for a maximum of $50 if a credit card is used fraudulently and have the right to dispute charges under certain circumstances, but Debit cards offer no such protection. Using one online puts your entire checking or savings account at risk.

ABELL'S ANECDOTES
By Pike W4EPU

One of my favorite long running weekly TV shows was HEE HAW. I still on occasion catch a rerun but they are getting few and far between. I liked the music, but most of all and the main reason I watched the show was the humor. In my opinion theirs was the best of down home country type humor.

One of my favorites of their dozen or so good comedians was Jerry Clower. He was an avid coon hunter and told some good stories about it. He said it was unsportsmanlike to shoot a coon after it has been treed. Instead, he would climb the tree, shake the coon out and it would land amongst the doggies. That way, he said, "The coon had a fightin' chance".

One time Clower was hunting with his friends John and Mr. Barron. The dogs treed an animal in a big sweet gum tree. Clower dared John to climb the tree and shake it out. Only, as John soon found out, it wasn't a coon, it was a lynx. Or as Clower would say, "A souped up wildcat." Here is Clower's account of what happened next.

That thing had great big tusks coming out of his mouth, and great big claws on the end of his feet; and people, that thing attacked John up in the top of that tree.

"Whaw! Oooo!" You could hear John squalling.
"What's the matter with John?"
"I don't have no idea what in the world's happened to John!"

"Knock him out, John-n-n!"

"WOW!OOO! This thing's killing me!"

The whole top of the tree was shaking. The dogs got biting the bark off the tree and fighting one another underneath the tree, and I kicked 'em and said, "You dogs get away!"
"You-owooo! This thing's killing me!"

John knew that Mr. Barron toted a pistol in his belt to shoot snakes with. He kept hollering, "Ohhh, shoot this thing! Have mercy, this thing's killing me! Shoot this thing!"

Mr. Barron said, "John, I can't shoot up there, I might hit you."

John said, "Well, just shoot up in here amongst us. One of us has got to have some relief!"

"They've cured my Arthritis!"

TREASURERS REPORT

By Becky Lee, KF4HTB

Balance forward from 1999	$4333.03
Deposits Year to Date	1813.19
TOTAL INCOME	**$6146.22**
Expenditures	1998.67
BALANCE AS AT 4/30/00	**$4147.55**

MAY MINUTES

By Becky, KF4HTB

After the opening ceremonies, Bud K4CWG talked about Field Day (June 24-25). He said that the City of Titusville has offered the club the use of city property at the water tower. He said this location would be much more convenient than the previously proposed site up near the Volusia county line on property owned by WB4ZUZ AND WB4ZUY - Theresa and Wynn. As soon as the arrangements can be finalized, you will be advised.

After the break, Bill W2SDB played "Happy Birthday" and several other tunes on his harmonica.

Anthony, KF4CEB thanked members for checking in during the hurricane alert and hurricane clean up. He asked the club's patience in the update of location assignments. He also talked about the June 10 Public Safety meeting in Merritt Island.

Stephanie, K4MVO reported on the Governors meeting held in Tampa. She also told the club that the Red Cross is holding training sessions at the various shelters and the radio club is invited to attend these training sessions. Call Stephanie for more information.

Warren, W4CEL talked about items needed for Field Day. Radios, extension cords, rope, tarps, lawn chairs, flash lights, batteries, bug spray, tables were some of the items mentioned. He also mentioned that attendees who were not operating, but standing around talking, should move away from the operating area so as not to interrupt the operators.

Ozzie, N4SCY told the club about a meeting he has set up with James Jennings, Deputy Director at the Space Center to discuss setting up an amateur radio station at the Space Center.

Becky, KF4HTB told the club that the portion of the 50/50 drawing that goes to the Jaycees for the use of their building for club functions is a very small amount, and suggested that the club add to this from the general fund so that the Jaycees receive a total of $200 per quarter. A motion was made. Seconded and carried to do this.

A special welcome was given to Troy Smith, KD6GBM and Mrs. Smith who were visiting from Grants Pass, Oregon. We all enjoyed meeting them and issue a special invitation to visit again.

Club Officers

President: Bud Hughes, K4CWG. 267-3450
V.Pres: Ozzie Osband, N4SCY. 321-LIFTOFF
Sec/Treas: Becky Lee, KF4HTB, 267-9375

Elected Board Members

Ken Denman, KD4HNW. 269-5711
John Renninger, KE4ZPA. 267-9431
Grant Hahne, KF4IGK. 269-6484
Sherry Hughes, KU4ZO. 269-0779

Repeater Custodian Board Members

Les Griner, K4SJC (146.91) 267-1565
Warren Murray, W4CEL (146.97) 638-5476
Dave McLean, WB4SIG (444.15) 267-6181
Larry Carr, WB9MFJ (Packet-Rose Node) 268-4114

Club Information

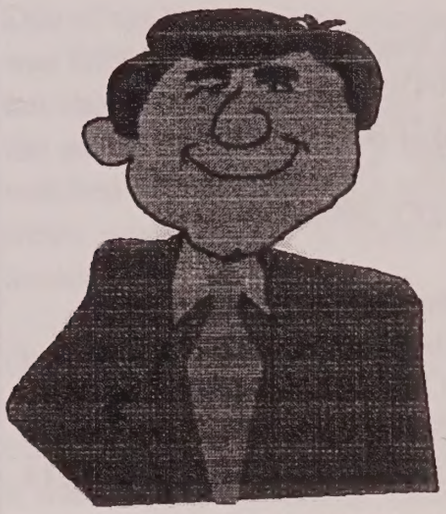
Meetings: Monthly on 4th Tuesday at 1900 hrs. at Jaycee Building

Newsletter Editors: KF4HTB Becky Lee
K4EOS Clyde Lee

Nets: **VIP**-Thursdays at 1000 hrs. 146.910
Friendship-Thursdays at 1830 hrs. 146.910
Mosquito-Wednesdays at 1900 hrs. 28.333
Traders-Fridays at 2000 hrs 146.910

TITUSVILLE AMATEUR RADIO CLUB
P. O. BOX 73
TITUSVILLE FL 32781-0073

June 2000



DADS ARE SPECIAL, TOO

MEMBERSHIP UPDATE

Total membership: 226 (154 regular, 54 family, 12 honorary, 6 other)

NEW MEMBER: WA3FKC Ed Summersett

RENEWALS:
KG4CEB Anthony Hurkala
KE4BBH Jimmie Prevatt
KE4HOG Nancie Prevatt
KF4IGN Doris Gionet
K4JYL John Adams
KE4WWO Mattie Adams
KF4LTW Tom Vick
KF4MUV Patty King
W4NMB Holland Starkey

HAMFESTS

6/10	UCF TAILGATE
8/26	FT. PIERCE
9/2-3	MELBOURNE
9/24	NEW PORT RICHEY
10/14	TAMPA
10/13-14	STARKE
10/14	SUNRISE
10/14-15	W.PALM BEACH
10/28	JACKSONVILL
11/4	SORRENTO

GK Bud 12/18/00